

Sustaining Mission Success... by balancing priorities



Jeff Fulgham
Chief Marketing Officer

GE
Water & Process Technologies



imagination at work

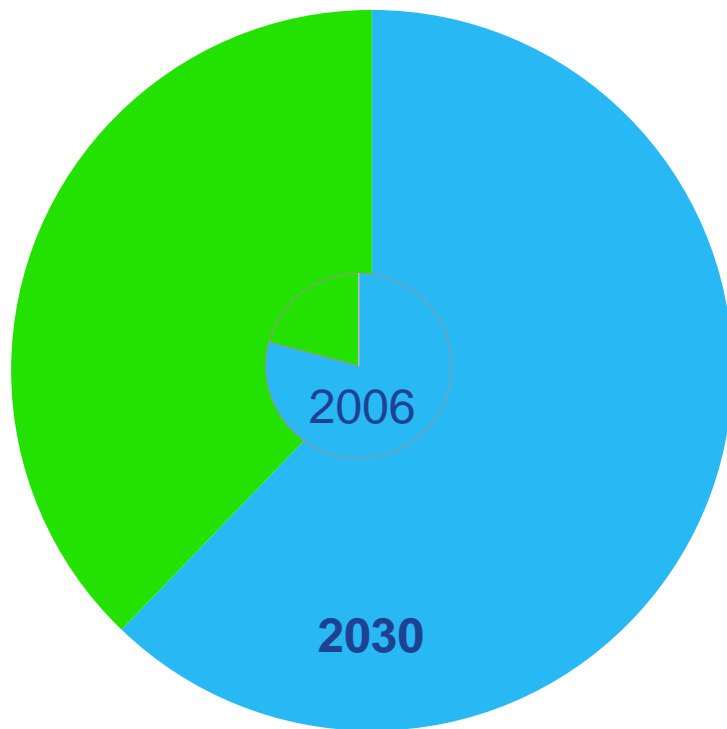
Growing in a constrained world

- Challenges and opportunities
- ecomagination... actions & results
- Water...the next wave
- Water solutions overview
- Future trends



Challenges & opportunities...

Gross Domestic Product



■ G7
Countries

■ E7
Countries



imagination at work

Resource Scarcity

1B+ people in water
scarcity... grows to 3B+

Energy Security + Cost

Demand at an all-time
high... fossil fuels under pressure

Regulation

Near consensus on
climate change...
legislation nearly certain

Impacting our customers

Operations

- Resource Costs

EHS, Gov't.

- Relations - Regulations

Strategy, Finance

- Risk & Uncertainty

Human Resources

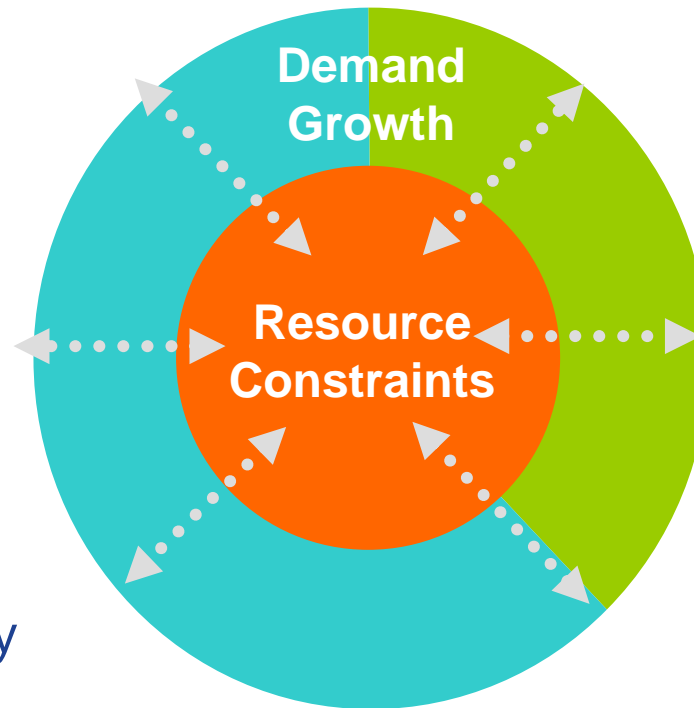
- Employee Attitudes

Communications

- Public Opinion

R&D, Marketing

- Market Demand



Global recognition

THE WALL STREET JOURNAL.

U.S. Energy Bill Heads To White House

WASHINGTON -- Congress by a wide margin approved the first increase in automobile fuel economy in 32 years Tuesday, and President Bush has signaled he will accept the mandates on the auto industry.

The energy bill, boosting mileage by 40% to 35 miles per gallon.

Forbes

China, US to Formulate Energy, Environment Protection 10 Year Plan

XIANGHE, China (XFN-ASIA) - China and the US

will announce a 10-year plan on energy and environmental protection during the third round of the 'Strategic Economic Dialogue', vice chairman of the National Development and Reform Commission

THE KOREA TIMES

S. Korea to Reduce Gas Emissions

By Yoon Won-sup
Staff Reporter

greenhouse gas emissions as part of efforts to minimize global climate change.

The New York Times

Brazil, Alarmed, Reconsiders Policy on Climate Change

By LARRY ROHTER

The factors behind the re-evaluation range from a

Brazil remains suspicious of foreign involvement in its

the guardian

newspaper of the year

How Africa's Desert Sun Can Bring Europe Power



A 550m solar power plant, backed by a Jordanian prince, could

THE TIMES OF INDIA

India: Sustainable Real Estate Development Gains Momentum

NEW DELHI: Sustainable Real Estate presents India with an unique opportunity to make concrete progress in the country's effort to improve its

In a recent research report titled 'Sustainable Real Estate Development in India', Jones Lang LaSalle Meghraj highlights the increasing trend

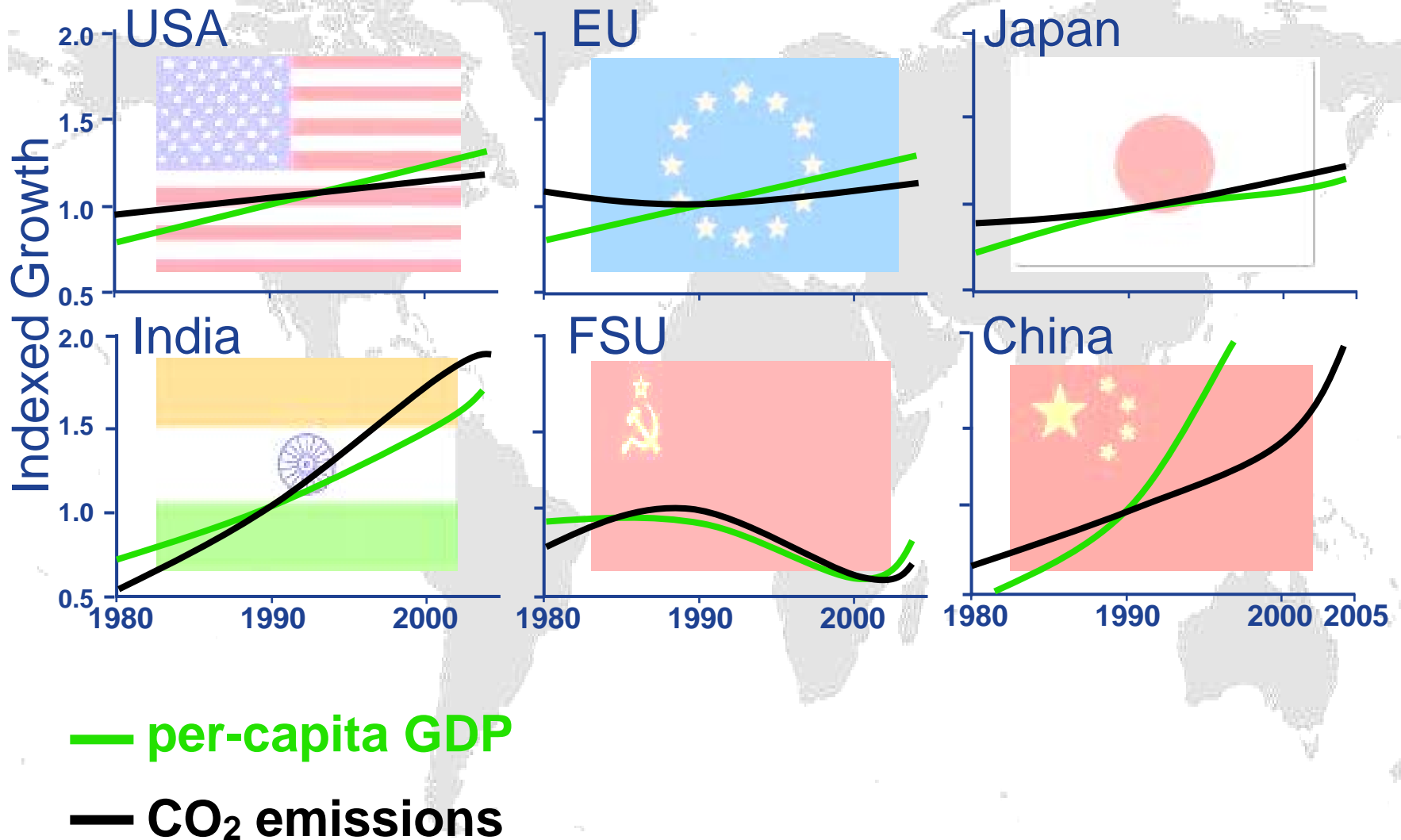
INTERNATIONAL Herald Tribune

Rudd Acts to Ratify Kyoto Accord in Australia

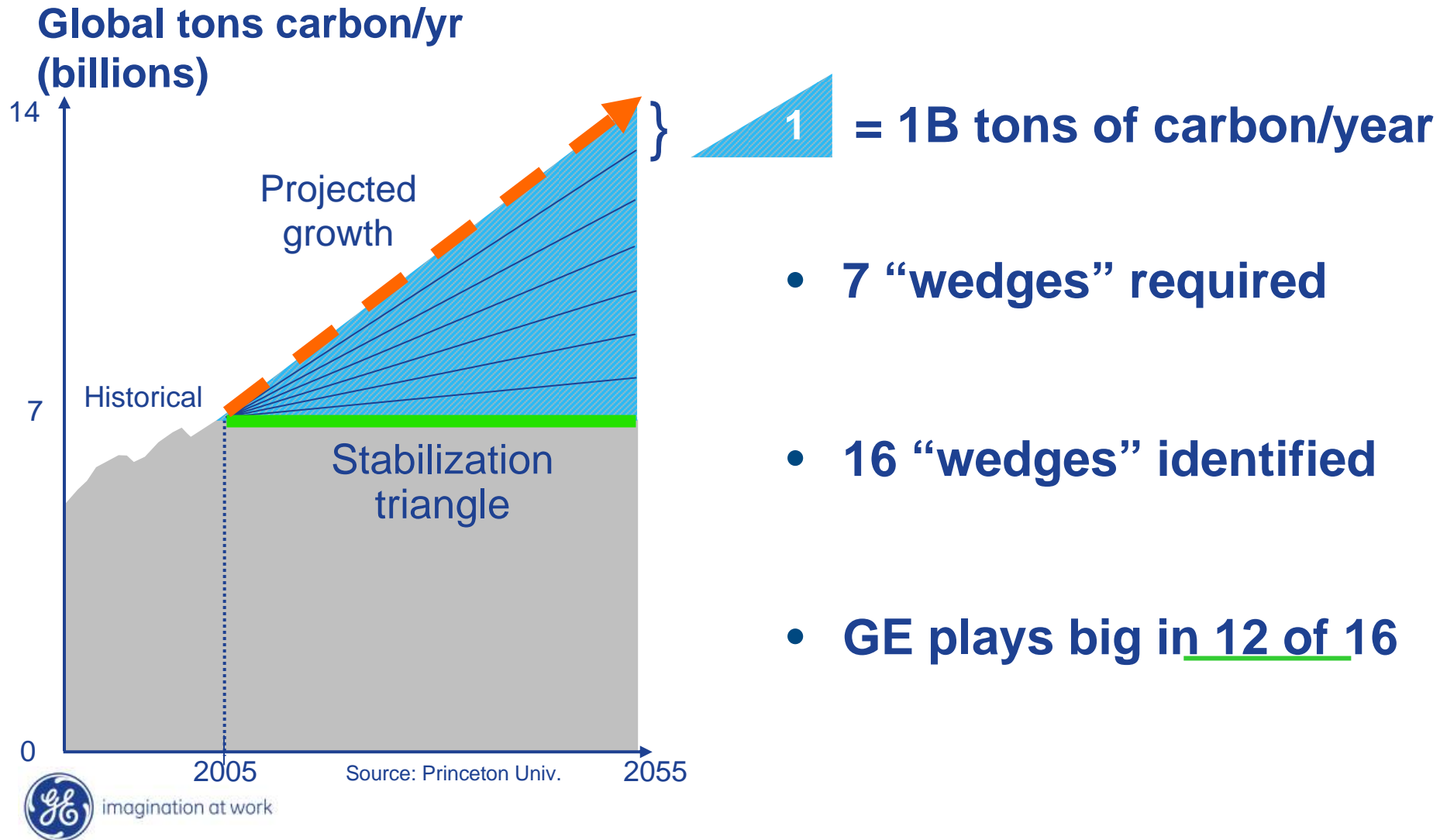
CANBERRA: Australia's new prime minister, Kevin Rudd, signed the agreement Monday to ratify the Kyoto



GDP↑...CO₂↑



CO₂ legislation/"carbon cost" inevitable



...GE's big plays

Efficiency

Buildings

Water Treatment
Appliances
Lighting



Transport

Aircraft Engines
Locomotives



Coal Plants

Energy Services
Water Treatment



Low carbon

power Renewables

Wind Turbines
Solar Power
Biogas Engines
Energy Finance



Natural Gas

Large-Frame Turbines
LM Turbines



Base

Load
Cleaner Coal
ESBWR Nuclear



Low carbon

fuels CO₂ Capture

BP H2 Joint Venture
Synfuels Technology

Biomass

Energy Finance
Water Treatment



Fuel Cell H₂

Forests & agriculture



Broad participation in “carbon management”



imagination at work

ecomagination Actions & Results

1. Grow revenues to \$20E

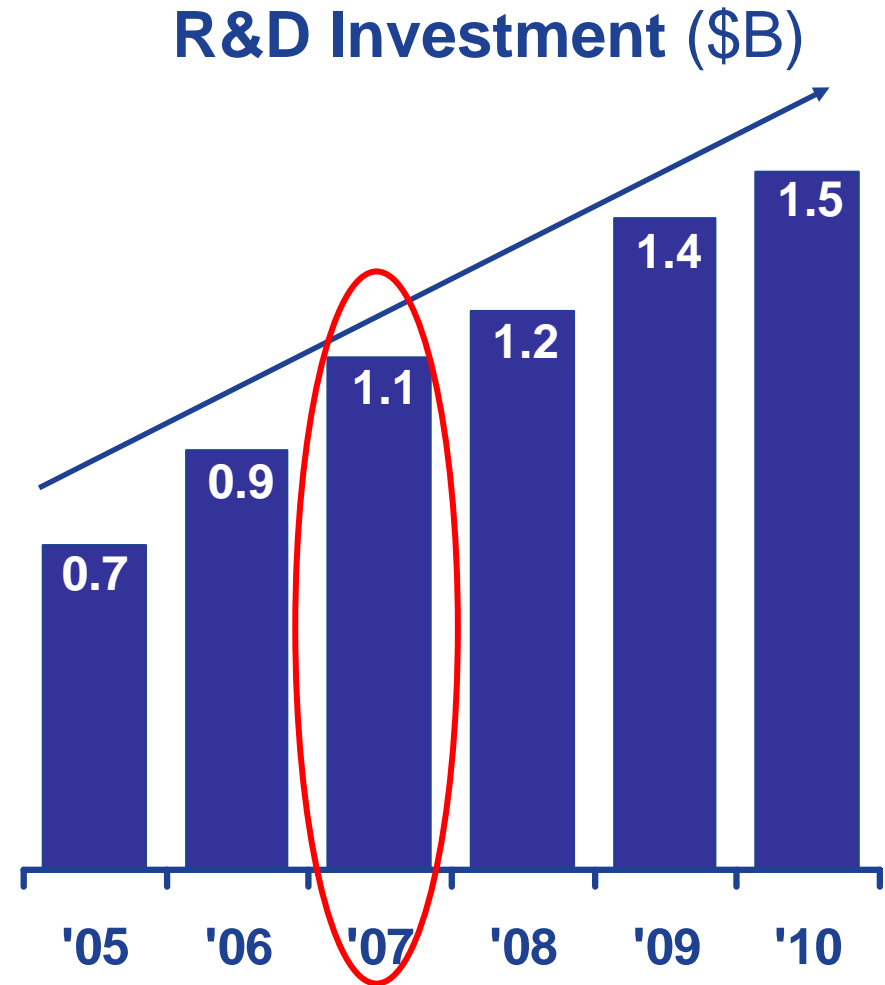
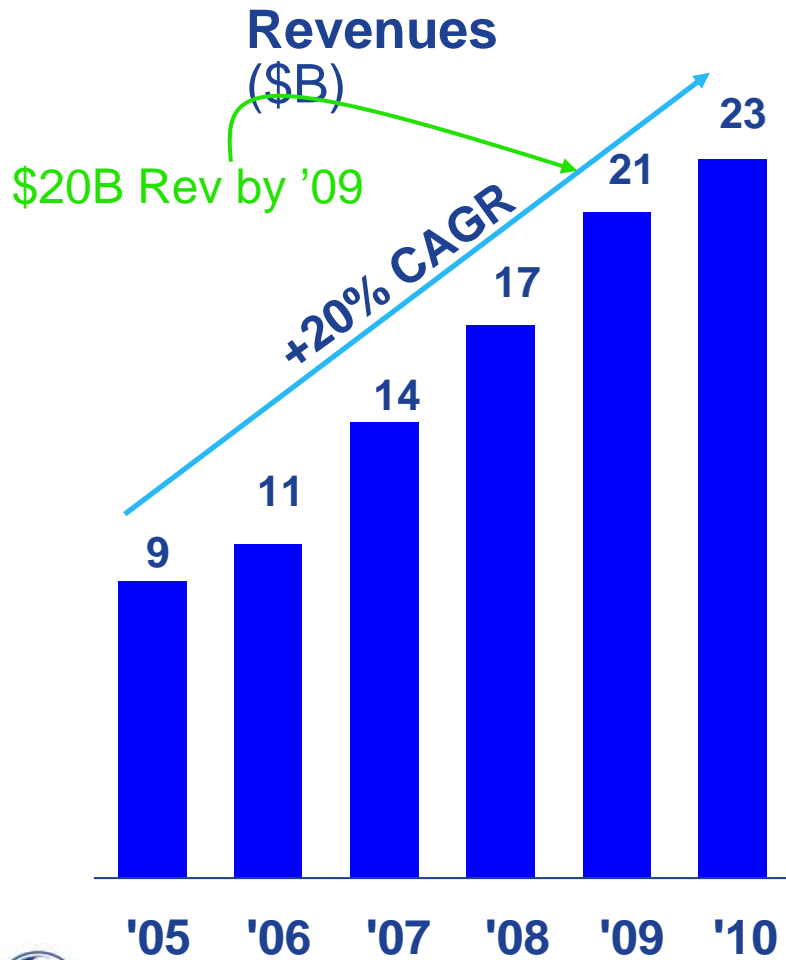
2. Double R&D to \$1.5B

3. Reduce GHG

4. Inform public



Revenue, ~~...\$20B~~ by 2010 R&D...\$1.5B by '10
\$25B



Lower emissions & energy

- Beating all emissions & energy targets
- 700 kT CO₂ reduced
- \$100 MM '07 energy savings
- Engaged teams
- Lean, “Treasure Hunts” & GE solutions

C&I Biomass Waste Heat Recovery



Jenbacher Gas Engine

Calculating Footprint

GHG & Water Inventory

- Annually since 2002
- Global, cross-business
- 500+ people involved
- Verified externally
- PowerSuite™

Includes

- 500+ large Sites
- 4,000 small sites
- Vehicles, aircraft
- Desal plants
- Water= sites >10MM gal



GHG Reports - Microsoft Internet Explorer provided by General Electric

File Edit View Favorites Tools Help

Support Central

Click to Show/Hide Criteria Selection Box for Printer Friendly Version

Excel Download

Organization Site

Click to view sub totals.

		Emission Total (Metric Tons CO ₂ Equivalent)	Cost (\$US)
Corporate Components		1,042.53	182,994.62
Corporate Components		1,042.53	182,994.62
Business	Organization Sub Org	Reporting Year	Date Recorded
GE Corporate	Corporate Properties Corporate Air Transport (CAT)	2004	3/7/2005
Corporate Properties		24,977.11	4,756,888.49
Corporate Properties		24,977.11	4,756,888.49
Business	Organization Sub Org	Reporting Year	Date Recorded
GE Corporate	Corporate Properties Headquarters Facilities Operation	2004	3/15/2005
GE Corporate	Corporate Properties Headquarters Facilities Operation	2004	3/15/2005
GE Corporate	Corporate Properties Headquarters Facilities Operation	2004	3/15/2005
GE Corporate	Corporate Properties Headquarters Facilities Operation	2004	3/15/2005
GE Corporate	Corporate Properties Headquarters Facilities Operation	2004	3/15/2005
GE Corporate	Corporate Properties Headquarters Facilities Operation	2004	3/15/2005
GE Global Research		110,652.50	14,860,248.77
GE Global Research		110,652.50	14,860,248.77
Business	Organization Sub Org	Date Recorded	Date Verified
GE Corporate	GE Global Research	3/2/2005	3/2/2005
GE Corporate	GE Global Research	3/2/2005	3/2/2005
GE Corporate	GE Global Research	3/2/2005	3/2/2005
GE Corporate	GE Global Research	3/2/2005	3/2/2005
GE Corporate Total		136,672.14	19,000,131.89

Start | Inboxes - Microsoft Office | Microsoft Excel - 20... | Microsoft PowerPoint... | http://powersuite.g... | Control Panel | GHG Reports - Mic...

GHG Reports

- Use GHG Reports by System/Location/Date/Status/Alternative Fuel Type/Model Type/Report Options.
- Click on the 'GHG Reports' link in the top navigation bar.
- Click on the 'GHG Reports' link in the top navigation bar.

1. Filter by Scope and Date

System:

Country:

Date Range:

2. Load By Criteria

Data Status:

Model Type:

Alternative Fuel Type:

Fuel Type:

3. Report Options

Total by Fuel:

Organization:

Report Type:

Tip: If you are not seeing the filter information, click on the 'Filter' button in the top navigation bar. If you are not seeing the report information, click on the 'Report' button in the top navigation bar.

GHG Report Criteria Summary

System:

Country:

Date Range:

Data Status:

Model Type:

Alternative Fuel Type:

Fuel Type:

Total by Fuel:

Organization:

Report Type:

Rewards & recognition

E-CO₂ Star

- Site Certification Program for >5% Reductions



E-CO₂ Awards

- Innovation and employee engagement
- Publication, \$5000 grant to be used in the spirit of ecomagination



Example: lighting upgrades

Replace older lighting with high efficiency fluorescent lamps and fixtures – dramatic improvement in lighting quality and energy savings



150+ plants converted globally

Green benefits – \$
93+MM KWH reduced
\$6.5MM annual savings
2 year payback

Green benefits – eco
59,000 tons of CO₂ ↓
= 11,400 cars ↓
= 17,700 acres of trees

ecomagination ... the next wave

- 1 Reduce** GE's water footprint 20% by 2012
- 2 Measure** and reduce our customer's water footprint
- 3 Benchmark** our customer's water footprint relative to their competition and industry
- 4 Advocate** for sustainable water policies
- 5 Lead** a group of forward-thinking global companies to drive change

GE – Focused on helping the world overcome unprecedented water infrastructure challenges



Increasing Water Scarcity



Threat of Waterborne Illness



Growth of Developing Nations



Rising Cost of Energy



New Stringent Regulations



Massive Infrastructure Needs

Enabling the future with portfolio solutions

**Desalination
Solutions**

**Municipal
Solutions**

**Product
Water**

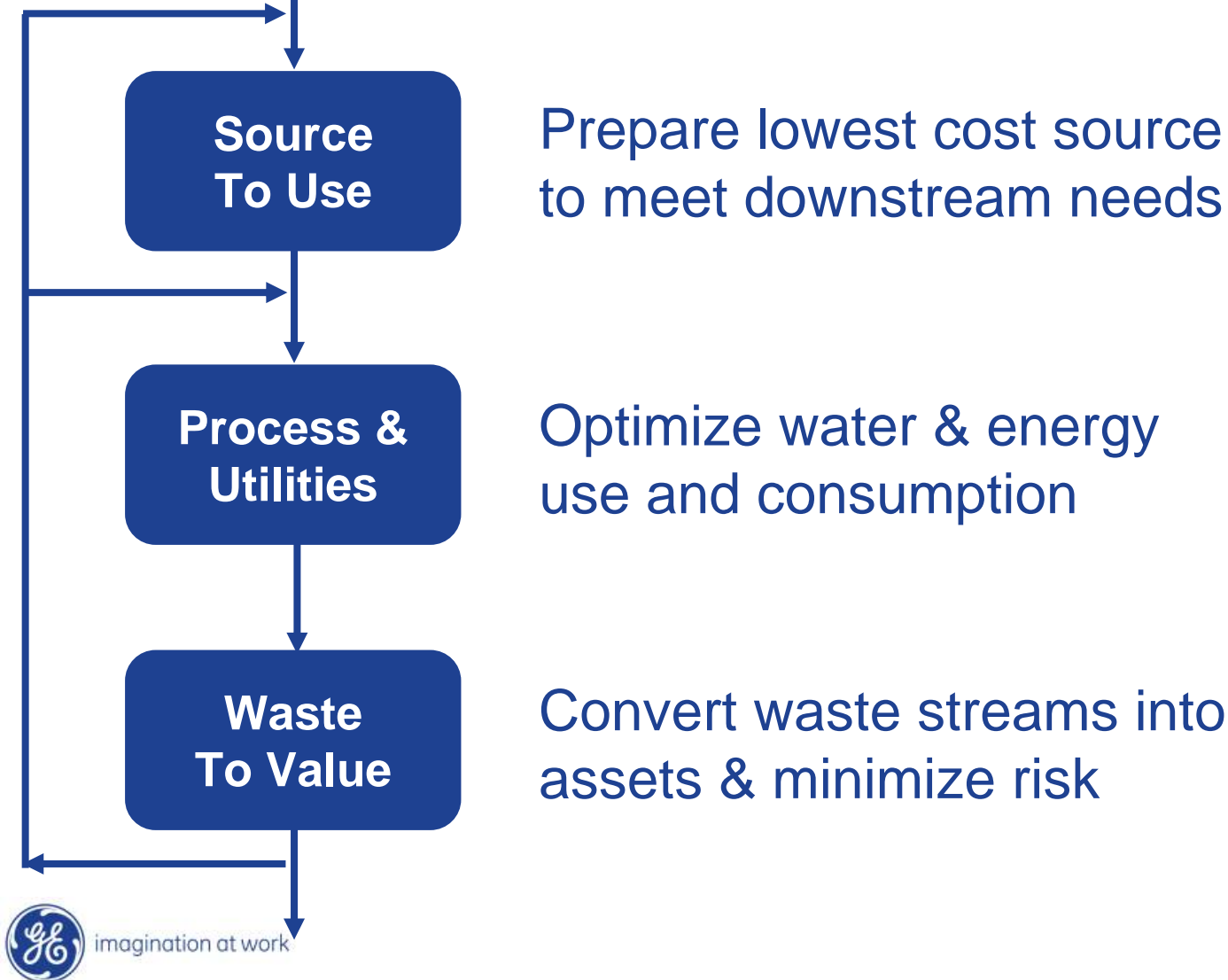
**Residential
Products**

**Utility
Solutions**

**Process
Chemicals &
Separations**

**Industrial
Wastewater**

Water Solutions – Simplified



Source to Use

**Source
To Use**

**Prepare lowest cost source
to meet downstream needs**

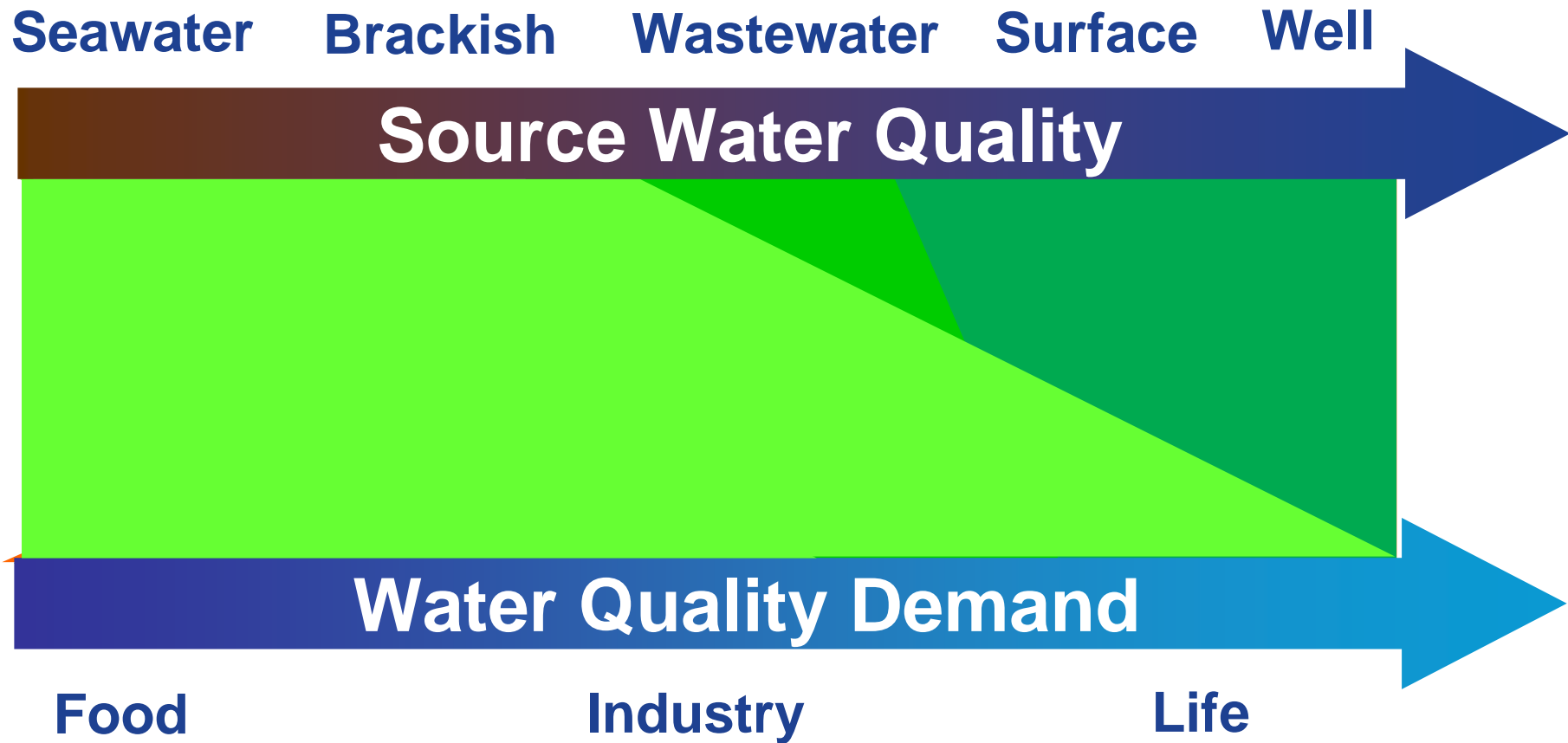
**Process &
Utilities**

Optimize water & energy
use and consumption

**Waste
To Value**

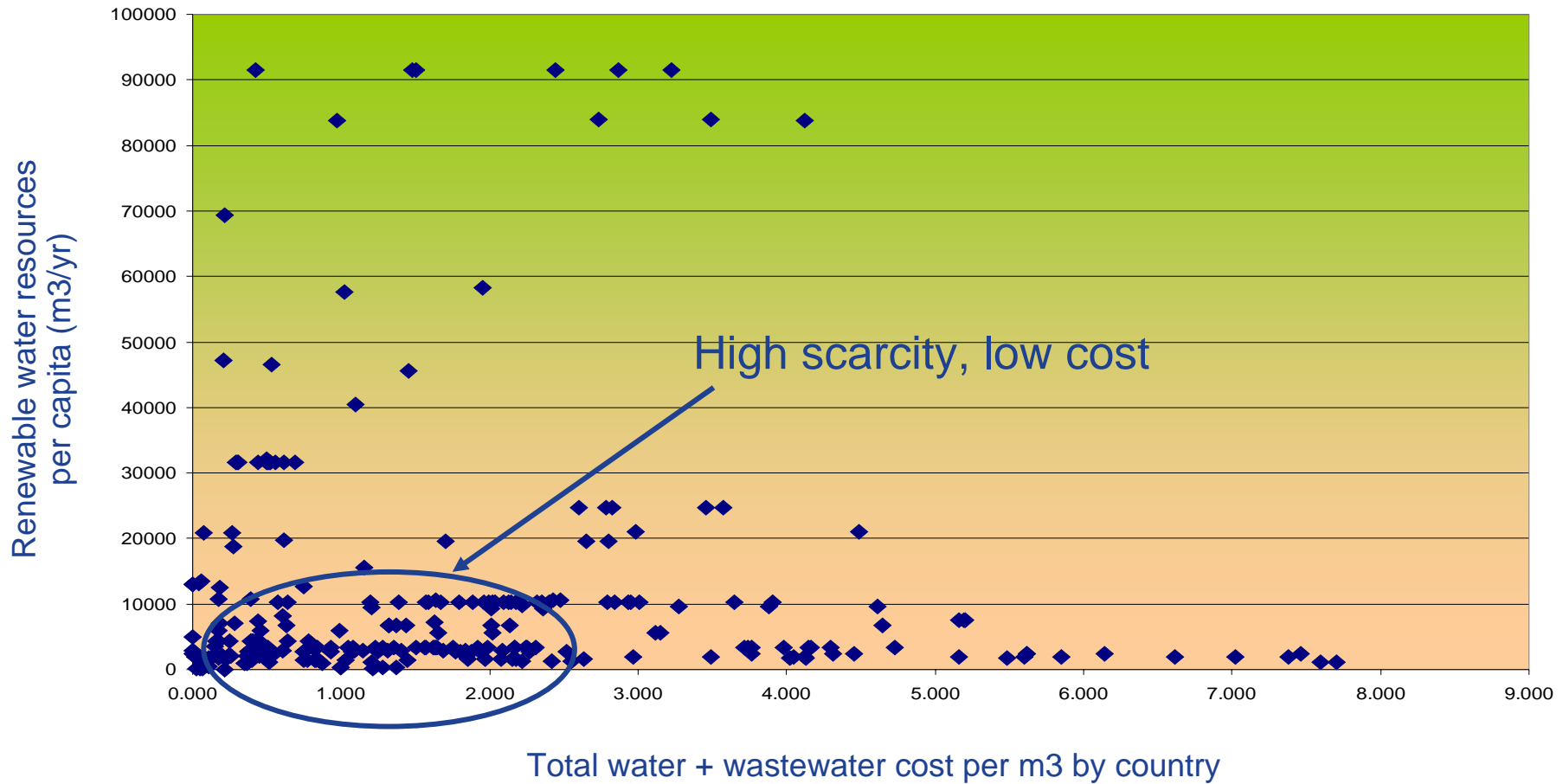
Convert waste streams
from liabilities into assets
& minimize risk

Relieving water scarcity through improved source water utilization



Value of water...what drives behavior?

“Correlation” of Price and Availability



Creating “NEWater” in Singapore

Challenge: Inadequate supplies of renewable fresh water

Solution: Treat and reuse wastewater effluent for local industry

Bedok NEWater Factory

Transforming wastewater into high quality industrial feedwater and potable water

Final product = “NEWater”

Feedwater for the electronics industry, wafer fabrication plants, and commercial building cooling towers

A growing percentage is released back into local reservoirs for indirect potable reuse



Meeting the needs of North Africa

Challenge: Insufficient fresh water to meet demands of growing city

Solution: Seawater reverse osmosis solution meets cities demand

Hamma SWRO provides 25% of Algiers drinking water

Largest reverse osmosis desalination plant in Africa

53 MM gallons per day...enough for 1 million people every day

25-year Build, Own, Operate agreement



Creating new water sources

Challenge: Insufficient quality water for irrigation and human consumption

Solution: Purify wastewater for irrigation, use fresh water for drinking

Sulaibiya plant in Kuwait City

Water produced for irrigation

Frees up fresh water for human consumption

375,000 cubic meters/day (100 MM gal/day)

World's largest membrane based wastewater filtration project



Process & Utilities

**Source
To Use**

Prepare lowest cost source
to meet downstream needs

**Process &
Utilities**

**Optimize water & energy
use and consumption**

**Waste
To Value**

Convert waste streams
from liabilities into assets
& minimize risk

Process & Utilities – current trends

- ✓ Reuse water for cooling makeup
- ✓ Automation & control
- ✓ “Green” chemistry
- ✓ Alternate biological control
- ✓ Blowdown reuse...cascade to lower quality needs
- ✓ Closed loop cooling
- ✓ Air cooled



Sustainable development leadership

Challenge: Challenge to meet sustainable development in NYC

Solution: Complete water recycle system exceeds expectations

Solaire Luxury Towers in Battery Park, New York City

Set the global standard for on-site water reuse systems

Up to 98% of water is recycled in the building for toilet flush water, laundry water and irrigation



Providing **eco** benefits in Argentina

Challenge: Water scarcity threatening refinery operation

Solution: Advanced chemical treatment program meets the challenge

Repsol YPF applied advanced Cooling Water & Wastewater technologies

Conserved 42 MM gallons of cooling water make up

Total savings \$530,000

Protected refinery assets from corrosion and fouling

Eliminated discharge to La Plata River



Waste to Value

**Source
To Use**

Prepare lowest cost source
to meet downstream needs

**Process &
Utilities**

Optimize water & energy
use and consumption

**Waste
To Value**

**Convert waste streams
from liabilities into
assets & minimize risk**

Removing heavy metals from waste

GE technology removes 99% of nitrates, selenium & other heavy metals to protect sensitive environments



Duke Energy Belews Creek
North Carolina

Turning wastewater into value

GE waste-to-value solution can recover up to 40% of a plant's thermal energy by converting wasted biogas into power



Meduri Farms, Oregon
Dried fruit producer

Do you see the wastewater reuse

Challenge: Blend wastewater treatment plant into community
Solution: Complete wastewater solution in a “home”

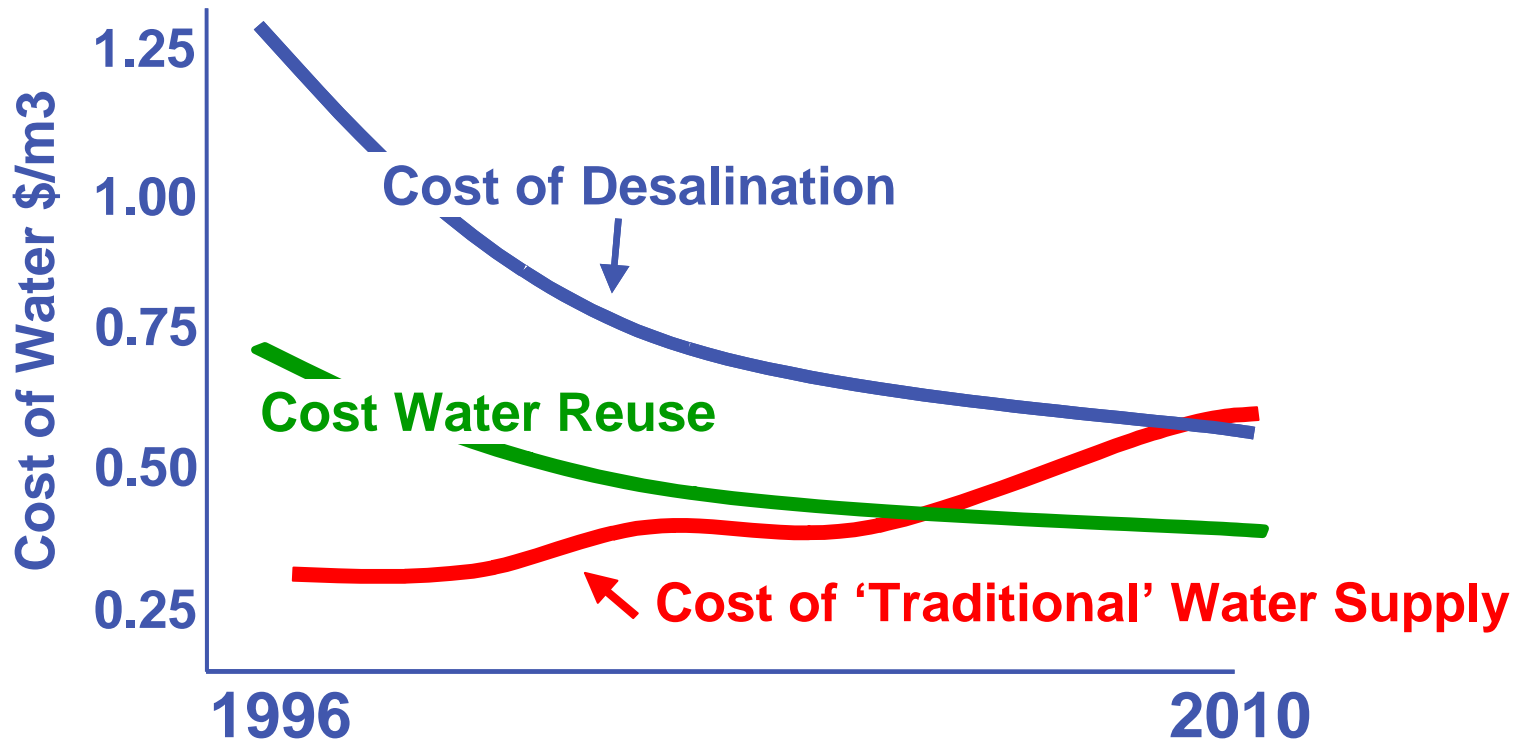
Duckett Creek in Missouri, USA

8,000 sq. ft. facility provides
wastewater treatment to 1,400
homes

Integrated UF/MBR purifies
wastewater for local community
without massive infrastructure



Critical intersection could drive behavior



Declining Desalination Cost

- Larger thermal units
- RO innovation

Declining Reuse Cost

- Innovation in advanced membrane technologies

Sustaining Mission Success.... by balancing priorities

*What will
you do?*



GE
Water & Process Technologies



imagination at work



imagination at work